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U.S. GENERAL ACCOUNTING OFFICE

STAFF STUDY

A-7D/E AIRCRAFT

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DEPARTMENTS OF THE NAVY

AND THE AIR FORCE

FEBRUARY 1973

UNCLASSIFIED

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## A-7D/E WEAPON SYSTEM

### SYSTEM DESCRIPTION AND STATUS

The A-7 aircraft was originally designed for the Navy but became a joint Navy-Air Force program early in 1966, when the Air Force was authorized to procure the A-7D. The A-7D/E is a single-place, single-engine, fixed-wing subsonic aircraft capable of striking sea and land targets, furnishing close air support to ground troops, and conducting armed reconnaissance and interdiction. The A-7D operates from land bases only, while the A-7E operates from either aircraft carriers or land.

Both aircraft are in production. As of June 30, 1972, the Air Force had 239 A-7Ds and the Navy had 359 A-7Es delivered. During fiscal year 1973, the Air Force and the Navy expect to take delivery of 105 and 27 of their respective aircraft.

The Air Force plans to procure an additional 24 A-7Ds in fiscal year 1973 and, when completed, will have purchased 411 aircraft in its program. The Navy plans to procure an additional 308 A-7Es through fiscal year 1978 and, when completed, will have purchased 694 aircraft in its program.

Information on this program was obtained by reviewing the Selected Acquisition Reports for fiscal year 1972 and their supporting documents and by interviewing officials in the system project office.

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## COST

The costs of the A-7D/E programs are discussed separately below.

## A-7D

We reviewed the current estimated cost of the program as of June 30, 1972, which was \$1,324.8 million, a decrease of \$52.4 million from the June 30, 1971, estimate. The cost change in the A-7D program is shown in the following table:

Current estimate June 30, 1971		\$ 1,377.2
Changes during fiscal year 1972:		
Support change	+\$22.3	
Estimating change	<u>- 74.7</u>	<u>-52.4</u>
Current estimate June 30, 1972		<u>\$ 1,324.8</u>

The increase of \$22.3 million in support costs is attributed to (1) \$16.5 million increase due to the procurement of 20 additional spare engines and (2) \$5.8 million increase due to the fiscal year 1972 advance buy of eight engines at \$4.2 million, and other long lead-time items for \$1.6 million.

The estimating changes made to the A-7D program resulted in a decrease of \$74.7 million in program costs. This decrease can be attributed to (1) \$4.4 million reduction due to repricing and definitization of contracts; (2) \$6 million reduction due to the procurement of spare engines in fiscal year 1972 at a more favorable unit price instead of the planned fiscal year 1973 procurement; and (3) \$64.3 million reduction due to a number of other changes including changing equipment from contractor-furnished to Government-furnished, consolidating training requirements and refining estimates (\$46.0 million Fiscal Year 1970 and \$18.3 million in fiscal year 1971 funding).

Subsequent to June 30, 1972, the program increased \$84.1 million for an additional 24 aircraft buy (\$45.3 million attributed to quantity, \$8.2 million to support, and \$30.6 million to estimating). In addition, a reduction in Fiscal Year 1971 estimates to current funding requirements reduced the program by \$3.8 million. As a result the current estimated cost of the A-7D program as of September 30, 1972, was \$1,405.1 million.

A-7E

We reviewed the current estimated cost of the program as of June 30, 1972, which was \$2,776.0 million, an increase of \$669.4 million from the June 30, 1971, estimate. The cost change in the A-7E program is shown in the following table:

Current estimate June 30, 1971		\$2,106.6
Changes during fiscal year 1972:		
Quantity change	+\$ 311.2	
Engineering change	93.9	
Estimating change	37.3	
Support change	13.0	
Schedule/estimating change	10.9	
Economic change	<u>203.1</u>	<u>660.4</u>
Current estimate June 30, 1972		<u>\$2,776.0</u>

As indicated above, a quantity change to the A-7E program resulted in a net increase of \$311.2 million. This increase can be attributed to the purchase of 128 additional aircraft. The additional aircraft are a part of the Navy's plan to eventually replace all aging A-7A and A-7B aircraft.

The \$93.9 million engineering change occurred because the Navy is developing and procuring the Target Recognition Attack Multisensors (TRAM). The TRAM component improves the capability of the pilot to detect and identify naval targets at night. Although TRAM increases the A-7E's attack

capability, current plans do not provide for TRAM in the first 505 aircraft accepted by the Navy. According to a Navy official, the retrofit of TRAM to these aircraft would be expensive and funds are not available at this time.

The \$37.3 million estimating change is associated with the Allison TF 41-A-2 engine. According to a Navy official, this change is the result of higher engine costs which occurred because of the repricing of future engine costs and a minor decrease in the development costs due to final contract negotiations. Similarly, support costs of \$13 million were incurred because of final price adjustments to prior years' spare parts contracts and the addition of TRAM support.

The \$10.9 million schedule/estimating change is associated with the estimate for program stretch-out and the invalid cost/quantity curve relationship.

The \$203.1 million for economic change is the Navy's estimate to cover inflation of the A-7E program at June 30, 1972. For further detail on economic escalation see page 5 of this report.

Subsequent to the completion of our review the September 30, 1972 SAR was released which showed a current estimated program cost of \$2,786.1 million for the A-7E. This is an increase of \$10.1 million from the June 30, 1972 current program estimate and is attributed to \$9.1 million for TRAM non-recurring and peculiar ground support equipment, and \$1.0 million related to repricing of out-year engine requirements.

### Economic escalation

The rates and amounts used by the Air Force and the Navy to compute economic escalation for their respective programs were different. Each is discussed separately below.

#### A-7D

We were advised that the planning and development estimates included about 3 percent for inflation although detail data supporting this factor were not available for our review. The current program cost estimate shown in the June 1972 SAR included an inflation allowance of about \$41 million. This amount was computed by applying a factor of 6 percent to airframe and engine costs.

#### A-7E

Prior to September 1971, the project office had not included an inflation allowance in its SAR because detailed cost information was not available. However, in September 1971 it was determined by the Navy that fiscal year 1972 was to be used as the base year for computing economic escalation. As a result, \$203.1 million was added to the program. This amount was computed by applying a factor of 5 percent to total aircraft and engine costs.

We found that the inflation rate used by the Navy and the Air Force was based on information furnished by the airframe and engine manufacturers. According to an Air Force official, the percentages varied because of the different components going into each aircraft.

Logistic support/additional  
procurement cost

In a letter dated May 25, 1972, the Assistant Secretary of Defense (Comptroller) issued new reporting requirements for the Logistic Support/Additional Procurement Cost section of the SAR. The letter stated, in part, that in the interest of uniformity, and clarification and simplification of the reporting requirement, only modification and component improvement costs will be reported. The instructions also stated that the period covered by these costs will be from program inception through either the last year of the Five-Year Defense Program or the last year of procurement of the basic system, whichever is later.

A-7D

Our review of the A-7D program showed a decrease of \$275.4 million in reported logistic support/additional procurement costs in fiscal year 1972. The reduction is attributed to (1) a decrease of \$269.0 million as a result of implementing the new reporting instructions, and (2) a decrease of \$6.4 million in modification costs as a result of recent cost experience. These changes in logistic support/additional procurement costs for the A-7D are shown below:

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<u>Cost Category</u>	<u>Current Estimate</u> <u>(\$ In Millions)</u>		
	<u>June 30, 1971</u>	<u>June 30, 1972</u>	<u>Net Change</u>
Modifications	\$ 48.6	\$ 42.8	\$ -5.8
Component Improvement	20.2	19.6	- .6
Subtotal	<u>\$ 68.8</u>	<u>\$ 62.4</u>	<u>\$ -6.4</u>
Modification Spares	\$ 6.1	Not reported	\$ -6.1
Replenishment Spares	144.3	Not reported	-144.3
Common AGE	28.1	Not reported	- 28.1
Common AGE Spares	1.1	Not reported	- 1.1
War Consumables	12.5	Not reported	- 12.5
Other	76.9	Not reported	- 76.9
Subtotal	<u>\$269.0</u>	<u>Not reported</u>	<u>\$-269.0</u>
 Total	 <u>\$337.8</u>	 <u>\$ 62.4</u>	 <u>\$-275.4</u>

#### A-7E

Our review of the A-7E program showed a net increase of \$43.3 million in reported logistic support/additional procurement costs in fiscal year 1972. This increase is attributed to (1) reporting component improvement costs of \$84.8 million and deleting replenishment spares of \$48.5 million as a result of implementing the new reporting instructions, and (2) an increase of \$7 million in modification costs because of required post-production changes to the aircraft due to in-service use. These changes in logistic support/additional procurement costs for the A-7E are shown below:

<u>Cost Category</u>	<u>Current Estimate</u> <u>(\$ In Millions)</u>		
	<u>June 30, 1971</u>	<u>June 30, 1972</u>	<u>Net Change</u>
Modifications	\$ 63.4	\$ 70.4	\$ + 7.0
Component Improvement	Not reported	84.8	+84.8
Subtotal	<u>\$ 63.4</u>	<u>\$ 155.2</u>	<u>\$ +91.8</u>
Replenishment Spares	\$ 48.5	Not reported	\$ -48.5
Subtotal	<u>\$ 48.5</u>	<u>Not reported</u>	<u>\$ -48.5</u>
 Total	 <u>\$ 111.9</u>	 <u>\$ 155.2</u>	 <u>\$ +43.3</u>

The Office of the Secretary of Defense is planning to meet with the House Appropriations Committee in early 1973 regarding the Committee needs for data in the SAR as cited in their report 92-1389 dated September 11, 1972. The Committee stated that considerable improvement was needed to the additional procurement cost section, including the need for firm baselines and the categories of costs to be reported. DOD Instruction 7000.3 will be revised to incorporate the results of this meeting.

Program funding

Since the Congress provided funds for these aircraft in different amounts, we are discussing the program funding separately below.

A-7D

As of June 30, 1972, the Congress had appropriated \$1,720.5 million for the A-7D program. Reprogramming actions of \$398 million decreased this amount to \$1,322.5 million, of which an estimated \$1,270.5 million had been obligated. Of the amount obligated, an estimated \$991.4 million had been expended.

Funds programmed as of June 30, 1972, are reflected below:

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	<u>Fiscal year 1972 and prior years</u>	<u>Fiscal year 1973</u>
	-----\$ millions	-----
Development	\$ 59.5	--
Procurement	1,263.0	\$ 2.3
Construction	--	--
<b>Total</b>	<u>\$ 1,322.5</u>	<u>\$ 2.3</u>

A-7E

As of June 30, 1972, the Congress had appropriated \$1,255 million for the A-7E program. Reprogramming actions of \$125.4 million increased this amount to \$1,380.4 million, of which an estimated \$1,347.1 million had been obligated. Of the amount obligated, an estimated \$1,182.7 million had been expended.

Funds programmed as of June 30, 1972, are reflected below.

	<u>Fiscal year 1972 and prior years</u>	<u>Fiscal year 1973</u>
	<u>-----\$millions-----</u>	<u>-----</u>
Development	\$ 20.4	\$ 5.7
Procurement	1,352.5	183.8
Construction	<u>1.6</u>	<u>--</u>
Total	<u>\$1,374.5</u>	<u>\$189.5</u>

CONTRACT DATA

Prime contractors for the A-7D/E are Vought Aeronautics Company, a division of LTV Aerospace Corporation, Dallas, Texas, the airframe contractor; and Detroit Diesel Allison Division of General Motors Corporation, the engine contractor.

With respect to the A-7D aircraft, the Navy has negotiated four fixed-price incentive contracts for the procurement of Air Force airframes for a total target cost of \$695.8 million. As of June 30, 1972, definitized contract changes had increased the target price to \$834.1 million. The Air Force estimates additional changes will be negotiated for approximately \$19.7 million. The Air Force reimburses the Navy for its costs through a Military Interdepartmental Purchase Request.

Similarly, the Navy has negotiated four fixed-price incentive contracts for the procurement of A-7E airframes for a total target cost of \$622.7 million. As of June 30, 1972, definitized contract changes had increased the target price to \$799.9 million. The Navy estimates additional changes will be negotiated for approximately \$22.9 million.

The Air Force manages the engine contracts for the A-7D/E aircraft. In this respect, one fixed-price total package procurement contract with

cost and performance incentives totaling \$118.3 million and two fixed-price redeterminable contracts totaling \$56 million have been negotiated with the engine contractor. As of June 30, 1972, definitized contract changes to the total package procurement contract had increased the target price for the contractor to \$193.7 million. Definitized changes to the two fixed-price redeterminable contracts had increased the contract cost to \$88.9 million.

The Air Force estimates additional changes will be negotiated for approximately \$1.3 million. Of this amount, \$1.2 million will apply to the two fixed-price redeterminable contracts and \$.1 million to the total package procurement contract. The Navy reimburses the Air Force for its costs through a Military Interdepartmental Purchase Request.

#### PERFORMANCE

Our review of the A-7D/E program showed that as of June 30, 1972, there had been no change in the systems' performance characteristics since June 30, 1971.

According to Air Force officials, the A-7D aircraft's performance goals relating to operational and technical characteristics have achieved or exceeded its contractual guarantee as set forth in its development estimate. Navy officials have informed us that the A-7E aircraft continues to meet all its operational requirements. Both aircraft currently exceed their reliability goals.

#### PROGRAM MILESTONES

Our review of the A-7D program shows that the program's milestones have been in the completed stage since March 1971. Similarly, the

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final A-7E program milestone "fleet operational" was accomplished as scheduled in April 1970.

#### RELATIONSHIP TO OTHER SYSTEMS

The A-7D has a primary mission of close air support until the A-X becomes operational, and a secondary mission of interdiction. It is intended to replace the F-100 and F-105 aircraft in these roles. The A-7E is not comparable to other Navy aircraft.

#### SELECTED ACQUISITION REPORTING

We reviewed the current DOD and Department of the Air Force and Navy instructions for preparation of the SAR and found no indications that the project offices failed to comply with the spirit and intent of the instructions.

#### MATTERS FOR CONSIDERATION

The report is being furnished to the Congress to inform them of the status of the A-7D/E programs.

#### AGENCY REVIEW

A draft of this staff study was reviewed informally by selected Air Force and Navy officials associated with the management of this program and their comments are incorporated in the report as we believe appropriate. We know of no residual differences with respect to the factual material presented herein.

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